

ABSTRACT OF THE DISCLOSURE

Disclosed is a bi-directional optical add/drop multiplexer connected to an optical fiber for transmitting optical signals multiplexed in a wavelength division multiplexing optical network and which performs adding/dropping of the optical signals. The optical add/drop multiplexer includes a first wavelength division multiplexer provided with a multiplexing port functioning as a path for forward or backward optical signals and with a plurality of demultiplexing ports, each functioning as a path of demultiplexed channels. A plurality of add/drop parts, each performing adding/dropping of preset channels, and connected with the demultiplexing ports of the first wavelength division multiplexer in one-to-one. A second wavelength division multiplexer connected with the plurality of add/drop parts in one-to-one, provided with a plurality of demultiplexing ports, each functioning as a path for demultiplexed channels and with a multiplexing port functioning as a path for forward or backward optical signals. The first wavelength division multiplexer has a free spectral range equal to that of the second wavelength division multiplexer, in which a wavelength band of the forward optical signals is included in the free spectral range having one period, while a wavelength band of the backward optical signals is included in the free spectral range having another period.